**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**WASHINGTON, D.C. 20460**

**OFFICE OF CHEMICAL SAFETY**
**AND POLLUTION PREVENTION**

**Date:** 10 November 2016

**Subject:** **Pyriproxyfen.** Occupational and Residential Exposure Assessment for a Proposed Use on Mattresses to Control Bed Bugs.

**PC Code:** 129032
**Registration Nos.:** 499-540
**Petition No.:** NA
**Risk Assessment Type:** Occupational/Residential Exposure Assessment
**TXR No.:** NA
**MRID No.:** NA

**DP Barcode:** D432210
**Decision No.:** 512087
**Regulatory Action:** Section 3
**Case No.:** NA
**CAS No.:** 95737-68-1
**40 CFR:** 180.510

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The Registration Division (RD) requested that the Health Effects Division (HED) conduct an exposure and risk assessment of the proposed new use on mattresses to control bed bugs for the registered product, TC 303 Pressurized Flea IGR & Adulticide (EPA Reg. #499-540).

Note that an updated risk assessment will not be forthcoming. RD may rely on the most recent human health risk assessment for the increase of established tolerance for residues of pyriproxyfen in/on tea (D427112, B. Cropp-Kohlligian, 11/06/2015) which evaluated aggregate residential exposure and is protective of the proposed use.

Pyriproxyfen [2-[1-methyl-2-(4-phenoxyphenoxy)ethoxy]pyridine] is a broad spectrum pyridine-based insect growth regulator used to control a variety of insects in agricultural and non-agricultural areas.

Proposed Use

In the current action, the registrant, BASF Corporation, proposes a new use on mattresses to control bed bugs for the registered product, TC 303 Pressurized Flea IGR & Adulticide (EPA Reg. #499-540); which is a multiple-active ingredient (ai) product containing 0.25% dinotefuran, 0.10% pyriproxyfen and 0.05% prallethrin. Only pyriproxyfen is evaluated in this assessment. The proposed application rate is 20 ounces of product for up to 2,625 square feet, applied in a sweeping motion at a speed of 1 foot per second, to mattress edges, tufts, folds, sides and seams.

Exposure Profile

There is a potential for residential handler exposure to pyriproxyfen over a short-term duration from treating the mattresses as well as post-application exposure from contacting treated mattresses. However, no dermal or inhalation hazard were identified; therefore, the only applicable exposure route/scenario is post-application incidental oral for children1 to <2 years old.

The level of contact and exposure associated with the proposed use has been evaluated previously for carpet treatments to control fleas (D411158, I. Nieves, 9/10/2013). In the previous assessment, the application method and exposure pattern are similar to that proposed, and exposure estimates are protective of the proposed use. The amount of active ingredient (ai) evaluated was $1.56 \times 10^{-6}$ pounds (lbs) ai per square foot ($ft^2$).

Residential Exposure/Risk

The use pattern evaluated with the previously assessed application rate of $1.56 \times 10^{-6}$ lbs ai/$ft^2$ yielded post-application incidental oral margins of exposure (MOEs) of 22,000 for hand-to-mouth exposure and 170,000 for object-to-mouth exposure. The level of concern (LOC) is 100; therefore, these risk estimates were not of concern and are protective of the proposed use.

Aggregate Risk

Aggregate risk was previously evaluated in the most recent risk assessment (D427112, B. Cropp-Kohlligian, 11/06/2015). The exposure level associated with the proposed new use has already been considered for that aggregate assessment and is not of concern. The short-term aggregate MOE for children 1 to <2 years old was 2,200; relative to the LOC of 100.

Occupational Exposure/Risk

The residential exposure assessment for the proposed use is considered protective of occupational exposure.